Report to the Consumer on Water Quality

January 1, 2004 – December 31, 2004

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

Díí kwe'é naaltsoos hasht'eelyaayíí 'éí nit haz'áníigi tó baa 'áháyáá dóó yá'át'ééh óolzinígíí yaa halne'.
Doo bik'i'dinitįįhgóó da, t'áá háida ta' níká'doolwot dóó hazhó'ó yee nit ch'íhodoo'áát.

When the well is dry, we know the worth of water.
Benjamin Franklin

Dear Water Consumer,

What a difference a few months can make in Northern Arizona. Last summer Upper Lake Mary had decreased to 22.3 percent of capacity, but following increased winter snowfall and positive runoff conditions the reservoir filled and started overflowing in January.

The last time this occurred was in 1995 and the replenished water resource will allow us to increase surface water production and reduce reliance on groundwater pumping.

The recent winter storms have not eliminated all effects of the drought, but they are a big help.

Water Conservation efforts have played a major role during the drought, and the Flagstaff community deserves special recognition for their continued cooperation and willingness to learn and practice water saving techniques.

Total production was down 4.2 % over last year and an effort was made to reduce ground water pumping from the Lake Mary and Woody Mountain wellfields, even though the lake was at minimal levels.

- Surface water production was 290 million gallons (MG) up 45%
- Lake Mary Wells produced 721 MG down 29%
- Woody Mountain Wells produced 1181 MG down 12 %,
- Inner Basin Wells produced 65 MG down 3%
- Local Wells produced 426 MG up 241%.

In last May's election , voter's approved the Utility Bond package authorizing improvements to the Wildcat Hill WWTP.

The Utilities Department has proceeded with the design phase of the project which will upgrade the facility and enable the capability to produce Class A+ reclaimed water for enhanced reuse distribution within Flagstaff.

The passage of the bonds also accommodates the drilling of wells to better manage groundwater pumping and acquire additional water resources near Flagstaff for future growth.

During 2004 the reclaim water program has included SCA Tissue, Christensen and Kinsey Elementary Schools, Siler Homes (Flagstaff Housing Authority) and Phase One conversions on the NAU Campus (NAU Dome area, Campus Heights Housing, Reilly Hall, Gabaldon Hall, Astronomic Research Observatory, ROTC/Hilltop Field) as reuse sites.

The Water Conservation Program has had a busy year implanting several successful and foundational water conservation initiatives which included working with green industry experts to develop a Xeriscape Workshop Series hosted by Coconino Community College and a regional water saving plant list.

The City of Flagstaff was awarded a water conservation grant from the Bureau of Reclamation to develop a Xeriscape Demonstration Garden. Look for construction to begin this summer at the historic Milligan House on Aspen Avenue.

The City of Flagstaff - Utilities Department has partnered with the Flagstaff Unified School District and the Bureau of Reclamation to increase water efficiency at FUSD facilities by installing 230 water free urinals. Marshall Elementary School is also piloting a water education program utilizing Project WET curriculm guides to promote water resource sustainability.

Your water utility continues to strive for excellence and promote wise water usage through education, awareness and resource conservation.

Water Quality is always of paramount importance and I am pleased to present you the 2004 City of Flagstaff ***Report to the Consumer on Water Quality***. This annual report outlines where your drinking water comes from, how it is treated, and the results of tests performed on the quality of Flagstaff drinking water.

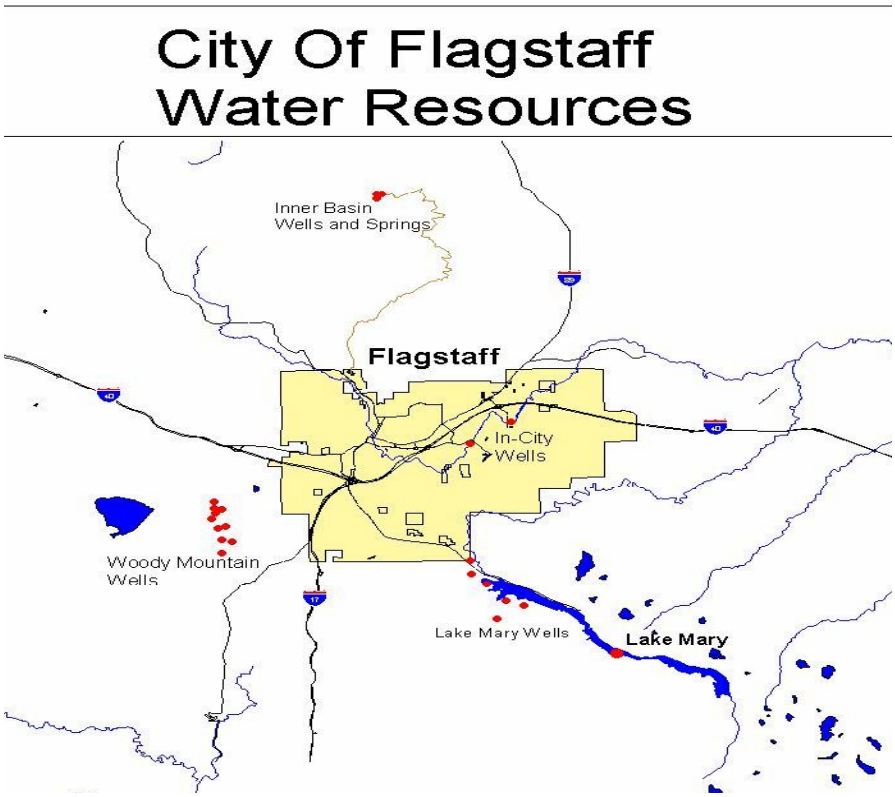
Additionally, as mandated by the U.S. Environmental Protection Agency, this report informs you of contaminant levels in your drinking water, as well as violations incurred last year, among other important health information. Thank you.

Ron Doba
Director, Utilities Department

Water Resources

In 2004 the Utilities Department distributed approximately 2.688 billion gallons of water to Flagstaff water customers. Total water production was down 4.2 % over last year.

The Department finds that conservation programs have been effective with reducing summer peak demands, and anticipates implementing additional water conservation programs in the future.



The City of Flagstaff is supplied by surface water from Upper Lake Mary and the Inner Basin of the San Francisco Peaks. We also pump groundwater from the Woody Mountain Wellfield, Lake Mary Wellfield, and other Local Wells, which tap the Coconino and Supai Aquifers.

These sources blend in the water distribution system and the amount of water coming from each source varies throughout the year.

CITY OF FLAGSTAFF
2004 WATER QUALITY TABLE

What Does The Water Quality Table Mean?

The table shows the results of our water-quality analyses. Every regulated contaminant that we detected in the water, even in minute traces, is listed here.

The Utilities Department conducted 1256 tests for 117 contaminants in 2004.

The information in the following table only addresses detected contaminants. We have chosen not to report information for contaminants tested for and not detected.

The table contains the name of each substance, the highest level allowed by regulation (**MCL**), the ideal goals for public health, the amount detected, the usual sources of such contamination, footnotes explaining our findings, and a key to units of measurement.

Important Drinking Water Definitions

Maximum Contaminant Level (MCL): The highest level of a regulated contaminant that is allowed in drinking water. The MCL is set as close to the MCLG (see below) as feasible using the best available treatment technology.

To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having their health compromised.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. The MCLG allows for a margin of safety.

Action Level (AL): The concentration of a contaminant, which if exceeded, triggers treatment or other requirement that a water system must meet.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MNR: Monitored Not Regulated

MPL: State Assigned Maximum Permissible Level

Unit Descriptions

ppm: parts per million, or milligrams per liter (mg/L)

ppb: parts per billion, or micrograms per liter (µg/L)

pCi/L: picocuries per liter (a measure of radioactivity)

NTU: Nephelometric Turbidity Units. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

% positive samples/month:
Percent of samples taken monthly that were positive

NA: Not applicable

ND: Not detected

NR: Monitoring not required, but recommended.

P/A Presence / Absence

TOC Total Organic Carbon

< Less than

> Greater than

2004 WATER QUALITY TABLE

Turbidity is a continuously monitored water quality parameter. The Water Production Division's supervisory control (SCADA) system is used to retrieve and store turbidity readings from individual filters and the combined filter effluent.

In 2004 there were periods of time during which data was not stored. This occurred during the months of March, May, June,July, and August. The maximum time elapsed for an individual occurrence was 10 hours.

As a result, there were five (5) monitoring violations in 2004 even though water leaving the plant met turbidity requirements.

The backup circular chart for combined filter effluent was used in these instances to demonstrate compliance.

A new circular chart recorder was installed at the Lake Mary Water Treatment Plant in December 2004 as a backup for individual filter turbidity monitoring.

It is the obligation of the Utilities Department to provide a safe and adequate supply of drinking water. To help please our customers and meet our obligation, the Utilities Department strongly encourages public input and community participation on decisions affecting your water resources.

Regular Flagstaff Water Commission meetings are held the third Thursday of each month. Meeting locations are posted on the official City bulletin board at City Hall. Meetings begin at 4:00 PM and you are always welcome.

Copies of this report are available at the Utilities Administration Office, City Hall 211 West Aspen Avenue, Flagstaff, AZ 86001, or on our web-site at **www.flagstaff.az.gov**.

This report provides you with valuable information about your drinking water that is easy to understand. We hope the results found in this report confirm that you can count on the City of Flagstaff for quality at the tap.

Why Are There Contaminates In My Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

More information about contaminants and potential health effects can be obtained by calling the **Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791)** or on the web at **www.epa.gov/safewater**.

Do I Need To Take Special Precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS, or other immune system disorders.

Some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care provider.

EPA and Center for Disease Control guidelines, on appropriate means to lessen the risk of infection by Cryptosporidium, are available from the **Safe Drinking Water Hotline (800-426-4791)**.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material, and can pick up substances resulting from the presence of animals or from human activity. **Contaminants that may be present in source water include:**

Microbial Contaminants: Viruses, bacteria, and protozoan, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. Microbial contaminants can cause short-term effects such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with compromised immune systems.

Inorganic Contaminants: Salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. Certain inorganic contaminants consumed at levels in excess of the required MCL may result in skin damage, circulatory problems, liver problems, kidney damage, and increased risk of cancer

Pesticides and Herbicides: Which may come from a variety of sources such as agriculture, storm-water runoff, and residential uses. Pesticides and Herbicides consumed at levels greater than the required MCL may result in increased risk of blood problems, reproductive difficulties, kidney and liver damage, and increased risk of cancer.

Synthetic and Volatile Organic Chemical Contaminants: Which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm-water runoff and septic systems.

Radioactive Contaminants: Which can be naturally occurring or be the result of oil and gas production and mining activities. Radioactive contaminants may result in an increased risk of getting cancer.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking Water Regulations

Arsenic: While your drinking water meets EPA's new standard for arsenic, it does contain low levels of arsenic.

EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Haloacetic Acids: Haloacetic acids are disinfection by-products that are formed when chlorine is used as the disinfectant. These compounds can increase the risk of cancer, and became regulated as of January 1, 2002 with a MCL of 0.060 mg/L.

Maximum Residual Disinfection Level (MRDL): Regulations for Maximum Residual Disinfection Level set a maximum limit for the running annual average MRDL at 4.0mg/L for chlorine.

TOC Removal Requirements: Control of disinfection by-product precursors has brought new regulations governing TOC removal requirements. TOC removal is accomplished through enhanced coagulation or enhanced softening. New regulations require a 50% TOC removal when the raw water TOC concentration is >8mg/L and alkalinity is <60mg/L. Violations shall occur when the ratio of the amount of actual TOC removal divided by the required amount of TOC removal is <1.

Turbidity: The Individual Filter effluent shall not exceed 1 NTU in two consecutive measurements 15 minutes apart, and shall not exceed 0.5 NTU in two consecutive measurements 15 minutes apart after 4 hours of continuous operation.

Thank you for reading this important information on your water's quality. We'll be happy to answer your questions about the City of Flagstaff's water supply.

Contact: Jack Rathjen, Water Production Supervisor (Lake Mary Water Treatment Plant) at (928) 774 - 0262, or find information about your water system on the City of Flagstaff website at www.flagstaff.az.gov.

Water quality data for community water systems throughout the United States is also available at **Environmental Protection Agency - Local Drinking Water Information**.